Mathematics QB For U2 - M1

1 Circle

1. Find the equation of the circle with (i) Centre at origin and radius 4. (ii) Centre at (-3, -2) and radius 6.
2. Find the centre and radius of the circle. (i) $x^2+y^2 = 25$ (ii) $\left(x-\frac{1}{2}\right)^2+\left(y+\frac{1}{3}\right)^2 = \frac{1}{36}$
3. Find the equation of the circle if the equations of two diameters are $2x+y = 6$ and $3x+2y = 4$ and the radius of circle is 9.
4. Find the equation of a circle passing through the origin and having intercepts 4 and -5 on the co-ordinate axes.
5. Find the equation of a circle passing through the points (1,-4), (5, 2) and having its centre on the line $x-2y+9 = 0$.
6. Find the centre and radius of the circle $x^2+y^2-6x-8y-24 = 0$
7. Find the centre and radius of the circle $x^2+y^2-x+2y-3 = 0$
8. Find the equation of the circle passing through the points (5, 7), (6, 6) and (2, -2).
9. If the circle passes through the points (0, 0), (a, 0) and (0, b), find the co-ordinates of its centre.

2 Mesures of Dispersion

10. Compute range for the following data:

Classes	62-64	64-66	66-68	68-70	70-72
Frequency	5	3	4	5	3

11. Find variance and S.D. for the following set of numbers 65, 77, 81, 98, 100, 80, 129
12. Compute variance for the following data:

Age in Years	16	17	18	19	20	21
No. of Students	20	7	11	17	30	15

13. Compute variance and standard deviation for the following data:

X	2	4	6	8	10	12	14	16	18	20
F	8	10	10	7	6	6	3	4	2	6

14. Compute variance and standard deviation :

X	31	32	33	34	35	36	37
F	15	12	10	8	9	10	6

15. The means of two samples of sizes 60 and 120 respectively are 35.4 and 30.9 and the standard deviations 4 and 5. Obtain the standard deviation of the sample of size 180 obtained by combining the two sample.
16. For a certain data, following information is available.

	X	Y
Mean	13	17
S.D.	3	2
Size	20	30

Obtain the combined standard deviation.

17. A group of 65 students of class XI have their average height is 150.4 cm with coefficient of variance 2.5%. What is the standard deviation of their height?
18. Given below is the information about marks obtained in Mathematics and Statistics by 100 students in a class. Which subject shows the highest variability in marks?

	Mathematics	Statistics
Mean	20	25
S.D.	2	3